

AMENDMENTS TO THE CLAIMS

The following listing of claims lists all of the pending claims and supersedes all prior listings and versions of the claims in this application.

1. (Cancelled)
2. (Cancelled)
3. (Currently Amended) An automotive suspension system wherein there is provided an upper ball joint system comprising a first metal ball joint as claimed in claim 9 and a lower ball joint system comprising a second metal ball joint as claimed in claim 9.
4. (Previously presented) A ball joint as claimed in claim 9, where said housing further comprises an external thread on the outside surface, said external thread being capable of attaching the housing to a support arm of the suspension system.
5. (Previously presented) A ball joint as claimed in claim 9, wherein said middle portion of said housing further comprises a flange that can be secured to the support arm by at least one detachable pin for attaching the housing to the support arm of the suspension system.
6. (Previously presented) A ball joint as claimed in claim 5, wherein the detachable pin is a bolt secured by a nut.
7. (Previously presented) A ball joint as claimed in claim 9, further comprising means for attaching the housing to the support arms of the suspension system comprising a compression fit of the housing into openings in the support arms.
8. (Cancelled)
9. (Currently Amended) A metal ball joint for use with a pressurized lubricant, the ball joint comprising in combination:

(i) an elongated shaft having an upper end and a lower end, said elongated shaft being threaded on the lower end;

(ii) a ball rigidly fixed and surmounted on the upper end of the elongated shaft, said ball having a curved surface, and further having a truncated flat face at the highest point opposite the upper end of the elongated shaft, ~~having a truncated flat face~~;

(iii) a housing having an outside surface, an upper flange with a threaded opening, a middle portion, and a lower end, said housing further having a curved seat formed at the lower end of the housing to seat and engage ~~the~~ a first portion of the curved surface of the ball adjacent the elongated shaft and an opening formed in the seat for passage therethrough of the elongated shaft but not permitting passage therethrough of the ball such as to permit pivotal movement of the elongated shaft relative to the housing, said middle portion of the housing having an internal thread and said middle portion further comprising an external thread ~~having a means~~ for attaching the housing to a socket;

(iv) a retaining member having an upper surface and a lower end, said retaining member having a curved seat formed at the lower end thereof to seat and engage a second portion of the curved surface of the ball adjacent the truncated flat surface thereof and a lubricating port located in the upper surface of the retaining member thereof, the lubricating port being in communication with a duct, said duct providing a passageway from the lubricating port to the truncated flat face of the ball, capable of permitting the admission of a pressurized lubricant, such that the pressurized lubricant exerts pressure against the retaining member and the truncated flat face of the ball to maintain pressure on the ball to maintain the ball against the seat of the housing. said retaining member having an external thread on ~~its~~ said lower end thereof, the external thread being engageable with the internal thread of the housing to trap the ball within the housing and the retaining member; the retaining member being capable of maintaining a seal between the ball and the housing via the pressure of the lubricant on the truncated flat face of the ball; and

(v) a set screw removably threaded into ~~a~~ the threaded opening in the upper flange of the housing into engagement with the retaining member such that the retaining member can be selectively removed from the housing by removal of the set screw.

10. (Cancelled)

11. (Previously presented) A ball joint as claimed in claim 9 wherein the housing is an integrally formed unitary component.

12. (Previously presented) A ball joint as claimed in claim 9 wherein the retaining member is an integrally formed unitary component.

13. (Previously presented) A ball joint as claimed in claim 9 wherein the set screw engages the upper surface of the retaining member.

14. (Currently Amended) A ball joint as claimed in claim 9 further including a socket, said socket comprising a cylindrical body having an internal surface, said internal surface being threaded to receive the external thread of said housing therein, ~~wherein said socket comprises a means for attachment of the ball joint to a carrier for a ball joint system near a terminal end of the carrier.~~

15. (Previously presented) A ball joint as claimed in claim 9 wherein the housing further comprises a top surface and said retaining member further comprises a flange abutting the top surface of the housing when the external threads of the retaining member are fully engaged with the internal threads of the housing.

16. (Previously presented) A ball joint as claimed in claim 9 wherein the external threads of the retaining member and the internal threads are disposed partially around the ball when the external threads of the retaining member are fully engaged with the internal threads of the housing.

17. (Currently Amended) A metal ball joint comprising in combination:

(i) a ball stud having an elongated shaft portion having an upper end and a lower end, a threaded portion at the lower end for engaging a drive member, and a ball portion at the upper end having a curved surface for mating with said socket of said housing;

(ii) a unitary housing having an outside surface having an external thread formed thereon, said external thread being capable of attaching the housing to a suspension system; a lower end having a lower seat formed therein to seat a first portion of the curved surface of the ball portion; an opening formed in the lower seat for passage therethrough of the elongated shaft portion but not permitting passage therethrough of the ball portion such as to permit pivotal movement of the elongated shaft portion relative to the housing; an inside surface having an internal thread formed thereon;

(iii) a unitary retaining member having an upper end having an upper seat formed therein to seat a second portion of the curved surface of the ball portion; a void in the upper seat between the ball portion and the retaining member; a lubricating duct formed in the retaining member providing a passageway capable of permitting the admission of a pressurized lubricant into the void; an external thread formed on the retaining member, the external thread being engageable with the internal thread of the housing, the retaining member and the housing being capable of trapping the ball portion between the upper seat and the lower seat and maintaining a seal between the ball portion and the housing via pressure of the lubricant in the void on the ball portion; and

(iv) a set screw capable of extending from the housing into engagement with the upper surface of the retaining member to prevent relative rotational motion therebetween.

18. (Previously presented) A ball joint as claimed in claim 17, where said unitary housing further comprises an external thread on the outside surface, said external thread being capable of attaching the housing to a support arm of the suspension system.

19. (Previously presented) A ball joint as claimed in claim 17, wherein said housing further comprises a flange that can be secured to the support arm by at least one detachable pin for attaching the housing to the support arm of the suspension system.
20. (Previously presented) A ball joint as claimed in claim 17, further comprising means for attaching the housing to a support arms of the suspension system comprising a compression fit of the housing into openings in the support arms.
21. (Currently Amended) A ball joint as claimed in claim 17, wherein the retaining member has a lubricating port located in the upper surface thereof, the lubricating port being in communication with a said lubricating duct, ~~said duct providing a passageway from the lubricating port to the truncated flat face of the ball~~, capable of permitting the admission of a said pressurized lubricant from said lubricating port to said lubricating duct, such that the pressurized lubricant exerts pressure against the retaining member and the truncated flat face of the ball to maintain pressure on the ball to maintain the ball against the seat of the housing.
22. (Previously presented) A ball joint as claimed in claim 17, wherein the housing further comprises a top surface and said retaining member further comprises a flange abutting the top surface of the housing when the external threads of the retaining member are fully engaged with the internal threads of the housing.
23. (Previously presented) A ball joint as claimed in claim 17, wherein the external threads of the retaining member and the internal threads are disposed partially around the ball when the external threads of the retaining member are fully engaged with the internal threads of the housing.